





# HARVARD MEDICAL ALUMNI BULLETIN

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JOHN B. HAWES II

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MEDICAL SCHOOL SYMPOSIUM  
ASSOCIATED HARVARD CLUBS



*October, 1938*

# IN AGRANULOCYTOSIS



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(Agranulocytosis: *Ann. Int. Med.*, 9:26, 1935.)

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JOHN BROMHAM HAWES, 2nd, '03.



## John B. Hawes, 2nd

John B. Hawes, 2nd, graduated from the Harvard Medical School in 1903, in such excellent standing and with so engaging a personality that he quickly secured one of the most favored house-officerships at the Massachusetts <sup>General</sup> Hospital, serving under Dr. Fred Shattuck, Dr. Elbridge G. Cutler, and Dr. James Minot. He was then and continued to be until his untimely death a remarkable able, efficient fellow, radiating nervous energy and putting his whole soul into everything he did. His seniors liked him and he was a leader among his colleagues, whether at the bedside, in the evening with song and beer, or on the river. Naturally, as he tells in the sketch of his life which he only began during his last illness, he was advised to settle in the Back Bay. So he hired an office with no visible means of paying for it, suffering the loneliness which must come to those who have left the shelter of the hospital and stepped alone into the world, and soon was almost bowled over by a telephone call from Dr. Shattuck, who invited him to be his assistant. To go with Dr. Shattuck on consultations, carry on his laboratory work and "camp" on his very serious cases was an education sufficient to make and mould anyone. He became at the same time a sort of medical aide to Dr. Edward Reynolds, gave his anesthetics and learned how a beloved and successful gynecologist conducted his affairs.

Having started with such interesting personalities, it is not surprising that he should have been trained for his real life's work in tuberculosis, by another unusual character, Dr. Arthur T. Cabot, then

head of the Massachusetts Tuberculosis Commission, an able, determined, artistic and, as his old house-officers remember, charming but irritable man with a hand in many affairs. He began in 1907, with Hawes to help him, to build up the great state sanatoria for tuberculosis. Rutland was already in existence; North Reading, Westfield and Lakeville were to follow. Dr. Cabot, like most of his relatives, knew when he wanted and got it, which must have inspired John Hawes to put through the many constructive enterprises for the control of tuberculosis which were to be the fruits of his career.

When Dr. Cabot died, in 1912, and the Tuberculosis Commission became the Division of Tuberculosis under the State Department of Health, Hawes continued to act as Secretary to the Board, a position which he held until about 1920, when he became consultant to the Veteran's Bureau for District No. 1 in Diseases of the Chest. He was now a leader in his line and in 1921, he became president of the Boston Tuberculosis Association. This organization, formerly the Boston Association for the Relief and Control of Tuberculosis, was born about 1903, in the living room of Dr. James J. Minot from the brains of Drs. Minot, E. A. Otis, A. K. Stone and other unselfish and far-sighted citizens. Hawes found it in a room or two at 3 Joy Street on the hill. Its Christmas seal sale then amounted to \$8000. Within a few years this amount had jumped to over \$50,000, and increasing voluntary subscriptions permitted the Association to expand.

The situation suited Hawes's genius. With plenty of energy and brains, he had been associated with men who did things, and from whom he learned how to do them. He knew how to get along with State and City officials. Above all, he liked to create and organize. There will be many who remember him at the Union Boat Club, of which he was for many years a moving spirit, both as an oarsman and an executive. And no one who ever attended a Sngerfest will forget the genial exuberance with which he ran that tuneful but tempestuous organization. It is perhaps a weakness in his character that as years went on, he found a control by others intolerable, resigning from the Massachusetts General Hospital and keeping at no time a connection with the Harvard Medical School, a great pity as his friends realized. However, perhaps he produced more by being independent and a little intractable. He certainly knew how to get things done. His direct, buoyant, often humorous way of treating his colleagues and those from whom he sought favors, his friendliness and obvious honesty could hardly have been better used.

No sooner had Hawes taken control of the Boston Tuberculosis Association than he set to work on a campaign which produced the Prendergast Preventorium, the Sheltered Workshop with its machinery for placing cured patients in appropriate industries—this last with the generous aid of Miss Isabelle Hyams and the Hyams fund—and the Horwood survey of tuberculosis in Boston, the loud repercussions of which were responsible for a most effective reform in the local handling of the indigent tuberculosis patient both in ambulatory clinics and in the Boston Sanatorium at Mattapan. Anent the Preventorium, it may not be out of place to quote from Hawes' annual report for 1922 (James J. Prendergast has given 30 acres of land on which the new institution was to take the place of an older one which boarded patients discharged from the Boston Consumptive Hospital): "I now wish

to speak of our preventorium. Last year, I spoke in terms of what we hoped to do and how we hoped to have a place in our 30 acres to take these little children—not consumptives—not tuberculous—but potential consumptives, if you will—where we could render them immune to the tuberculosis which threatened them. . . . School has been held regularly at the Sanatorium since the middle of November in a remodelled voting booth loaned by the City of Boston. A new school building is now being constructed."

It was entirely characteristic that his efforts should have taken this humane direction and at the same time that he should have persuaded the City to give him not only a voting booth but the old Tyler Street School for his Sheltered Workshop. Moreover, it is a tribute to his charm that he should have induced the City to assist his enterprises while at the same time everlastingly pursuing it to pay the board of the children it referred to the Preventorium.

Entirely outside of these important activities, Hawes created the Trudeau Society, which included all physicians of the State who were interested in tuberculosis, and the South End Medical Club, consisting of local doctors practising in the neighborhood of the Boston Tuberculosis Association on Columbus Avenue. This latter club met regularly for lunch and a scientific meeting at the Association's rooms. As a private venture, in 1930, he became Director of the Rutland Cottage Sanatorium to which he sent his own patients and to which he would make an all day visit several times a month.

By medical literature Hawes did decidedly more than his duty. He contributed countless articles to medical periodicals, including a very graceful and intimate memoir of Dr. Fred Shattuck. He wrote six books. "Consumption," written in 1915, went through three editions. He also wrote "Tuberculosis and the Community" and "Talks on Tuberculosis." For "Early Pulmonary Tuberculosis" and his



popular "You and the Doctor," prefaces were written by Dr. Richard Cabot. In "The Diagnosis and Treatment of Pulmonary Tuberculosis" he collaborated with Moses J. Stone. To carry on those multifarious labors he kept himself fit. For years he almost lived in the Union Boat Club and when rowing became too strenuous, took up golf with enthusiasm and success. In his last days, when incapacitated by illness, he took to water-colors.

It would be idle to say that John Hawes, with all his kindness, geniality and charm, his exhibitions of patience and fortitude, didn't have prickles. There was something of a child of nature in him. It sometimes seemed as if the better you knew him the more likely you were to find yourself, from time to time, in controversial discussion with him. But after all, wasn't he paying you a compliment? He found plenty of fault with himself. In only one other respect did his character seem inconsistent. For all his contributions to the cause of tuberculosis he was, in

some directions, conservative to a fault. He could hardly bear, for instance, to belittle the importance of history-taking and physical examination by depending upon the X-ray. In such a matter as this he had to be shown! One should not attempt to analyze a character like that of John Hawes, with its charm, its contradictions and its touch of genius. He contributed greatly in his generous way to the advancement of medicine and the care of the tuberculous. He never shirked responsibility, whether in establishing a Preventorium, organizing a meeting, or getting up the singing at a dinner. He gave to all the various groups among which his many talents led him, members of clubs and medical societies, patients, oarsmen, Sangerfesters, in short, a number of affectionate friends greater than most men can ever hope to possess, an unusually good time. He was a fine, lovable, vital fellow, an honor to his city and his profession.

JOHN HOMANS, '03.

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# Medical School Symposium

## Associated Harvard Clubs

As a part of the Annual Meeting of the Associated Harvard Clubs in Chicago, May 20-22, 1938, there was held a symposium on medical education. Four addresses given on that occasion by Dean Burwell, Dr. Hastings, Dr. Bauer, and Dr. Cutler dealt with various aspects of the present day program at the Harvard Medical School and will be of interest to all alumni of the School. The addresses are reprinted in full in this number of the BULLETIN. The symposium was under the direction of Dr. Willard O. Thompson (M.D., 1923), Associate Clinical Professor of Medicine, Rush Medical College, Chicago.

CHAIRMAN THOMPSON: It is a great pleasure to have so many distinguished men from the faculty of the Medical School in Chicago this afternoon, as well as so many distinguished guests both from Chicago and from various parts of the Middle West.

The general idea is to have rather brief presentations of papers by the men scheduled on the program and then to have a considerable amount of informal discussion. What we have planned is a symposium on medical education. The Dean will speak twenty minutes and the others fifteen minutes each, and I may say we will adhere very rigidly to these time limits.

It gives me great pleasure to introduce to you Dr. C. Sidney Burwell, recently appointed Dean and Research Professor of Clinical Medicine in the Harvard Medical School. He will talk on, "The Harvard Medical School in 1938."

### DEAN C. SIDNEY BURWELL

#### *The Harvard Medical School in 1938*

DR. C. SIDNEY BURWELL: Mr. Chairman, Graduates and Friends of the Harvard Medical School: From the Faculty of Medicine I bring a warm greeting to

the former students of the school, and to those friends of medical education who have been kind enough to come here to aid us in our discussion of some of the problems which face not only the Harvard Medical School but all schools concerned with the problem of medical education.

My colleagues and I are particularly happy to have this opportunity to present to you some of these problems and a report of some situations in the school, because we are aware that there has been too little contact between the faculty of the school and that important part of the University which is represented by the alumni.

In this connection I am glad to be able to report that the President and Fellows, in their wisdom, have recently appointed Dr. Marshall N. Fulton as Assistant to the Dean of the Medical School, and that he has arranged to devote part of his time to carrying on important administrative services with regard to the alumni. This duty, I am sure, will be a pleasant one. Dr. Fulton will continue his teaching and his research and his care of patients, but I hope that he will serve as an important link between the school and its graduates.

I shall speak rather briefly; rather more briefly than Dr. Thompson has threatened. What I shall have to say will be partly descriptive of the school as it is today, and partly introductory to the more important considerations of medical education that are to be presented by my three colleagues in the school.

One who returns to the Harvard Medical School after an absence, as I have recently done, is struck by both similarities to and differences from the School he formerly knew. For example, although there have been a good many changes in-

side the buildings, from without they look much the same, and I have to report to you that there is still water in the tunnels when it rains. However, although buildings and physical equipment are of some importance to an institution, far and away the most important characteristics are those of the people who compose the institution. The characteristics of these people determine the present quality and the future position of the School in greater measure than any other factor or factors. From this point of view, the Harvard Medical School appears to consist chiefly of two groups of people, faculty and students. Some years ago one might have said that these two groups of people were joined together by a curriculum. Now we may rather say that they are united by common interests and purposes.

I propose, first, to report briefly on certain matters concerning the students of the Harvard Medical School. In his Cincinnati speech in February, President Conant said, "The endowed colleges and universities have a clear duty to be as national in scope as possible." In connection with this remark, it is interesting to consider the change in the origin and distribution of the graduates of the Harvard Medical School. Last June, I attended the reunion of one of the Harvard Medical School classes which was graduated nearly forty years ago. They had a very good dinner. There had been in that class 107 men, of whom 95 had come from New England. At present, about one-third of the students in the Medical School come from New England and two-thirds from other parts of this country and from other countries.

This observation, interesting and encouraging as I believe it to be, is only an introduction to another question. That is, where do these men go? It is sometimes suggested that they all practice in Boston. This is not so. There is a distribution of graduates of the Harvard Medical School which has a clear relation to the origin of these students.

The records of ten classes have been studied—a total of 1,200 graduates who finished the School in the years 1920 to 1929 inclusive. Of these 1,200 men, 475 came from New England, a little more than one-third over that ten-year period. Of the 1,200, 553 are now resident in New England. These are only net figures that I am referring to. This represents a gain for these ten years of seventy-eight men for the New England states, about eight men a year, non-New Englanders from the Harvard Medical School who ended up in New England.

One hundred ninety-two of the 1,200 came from the Middle Atlantic States—New York, New Jersey, Pennsylvania, Delaware and Maryland. But 243 of the original 1,200 now live in these states, a gain of fifty-one, and a larger percentage gain for the Middle Atlantic States.

From the Middle West came 235 men, and in these same states now live 156 of the 1,200. The South sent 119 and got back eighty-six. Thus the Middle West may be said to have lost seventy-nine men and the South to have lost thirty-three. The Far West sent 138 and got back 135.

These figures, if any of you are checking me, will not add up to 1,200 either in the case of origin or distribution, because during the same period forty-one men came from outside the country to go to the Harvard Medical School, and twenty-seven of the forty-one are now resident in the United States.

Nevertheless these figures do show, I think, two things: One, that there exists a current (which everyone knew) which carries a certain number of men from the South and West to the older cities of the Atlantic seaboard. This does not appear to operate more for the northern Atlantic than for the Middle Atlantic States. However, most of the men from every section of the country have returned to practice in the general section, not necessarily the state, from which they came. And this means that the Harvard Medical School, through its graduates, is serving

all parts of the country to a much greater degree than it has ever done before.

Now the value of what these men take to the United States when they go to these various parts of it, and indeed the general quality of medicine in the future, will be influenced very much by the methods used in the selection of students for admission to this Medical School and to other medical schools. You are all familiar with the problem that medical schools face, for only about half the men who apply to the medical schools can be admitted at all, and most schools have to choose their classes from a very large number of applicants.

In the year just past, indeed between October and the first of March, the Admissions Committee in the Harvard Medical School considered the applications of over 900 men, from whom it had the difficult task of choosing 125 for admission. This hard-working and earnest committee is made up of men of various interests and training. It does not resort to formulas or to quotas, but bases its decision in each case on all the evidence which it can gather about the individual. Its aim is to select, from the 900, 125 men of superior intellectual capacity, particularly fitted by character and the potentiality of future development for the best possible results from their exposure to the Harvard Medical School.

This Committee is very clearly conscious of the fact that it can make mistakes. It can make two kinds of mistakes, in the main. It can admit men to the School who for one reason or for another are temperamentally unfitted for or not equal to the demands of the School and the profession, and in this respect the committee operates pretty well, since the so-called mortality from scholastic disasters is less than five per cent. It could be less than that were it not, I think, for the correct judgment of the Committee that it must not always play safe. There are times in its deliberations when it quite deliberately realizes that it is taking something of a risk in admitting Mr. A, but does so be-

cause, although the possibility of failure may be there, there also seem to be possibilities of extraordinary success. Of course the Medical School knows about these mistakes, and they come back to the Admissions Committee without much doubt.

It can, however, make another kind of error and one much more difficult to recognize. It may, by misinterpretation of the evidence, refuse admission to superior individuals. We want to have information about this second type. We are following up some of the men we have rejected in their course through other medical schools, and if any of you know of men rejected by the Harvard Medical School Admissions Committee who subsequently had brilliant records in other medical schools or in after life, we should like very much to know it, for by so doing we may learn something about the reasons for our failure in selection.

In the Admissions Committee we are more concerned with quality of mind and of character than we are with specific course requirements. It is, however, necessary to say a word about the equipment which the medical student brings with him to the Medical School. On the one hand, it is clearly essential that he be supplied with enough experience in chemistry, biology and physics to enable him to orient himself without undue loss of time in the complex fields of anatomy, physiology and bio-chemistry. Certain specific requirements are therefore necessary. On the other hand, there is the equally clear need in medicine for liberally educated men, since these men in the future are to deal with the problems of men and women as well as with the problems of physiology.

Moreover, it is accepted by our Admissions Board that diversity of training and variety of experience are desirable in the group entering the Medical School. Obviously this problem of pre-medical training concerns the College quite as much as the Medical School. As the President said last night, the problem of preparation for professional schools has two aspects, one,



adequate preparation for the professional training and, second, the protection of the liberal education.

Recently, the President has appointed a University Committee to consider the problem of the relations between the Medical School and other divisions of the University, with particular reference to the college training of men who intend to enter upon medical careers. This Committee is still engaged in the accumulation of information and data, but it is hoped that before long a better understanding of the situation will be brought about and that both the Medical School and the College will benefit from the work of this Committee. We should be extremely grateful for suggestions with regard to this matter from people in this symposium.

Once a man has been admitted to the School, two aspects of his life as a student are quite different from the situation fifteen or twenty years ago. One of these is the opportunity he has of living under much improved living conditions in Vanderbilt Hall. I am sure it can be said and supported that Vanderbilt Hall has improved the students' health, their work, and their knowledge of each other.

Another change that is an interesting one is in the organization of the Student Health Service. As you know, this is now organized under the leadership of Dr. Arlie V. Bock, Professor of Hygiene, and is an integral part of the general University Health Service. The medical students pay the usual university fee for the Health Service; they are sent to the Stillman Infirmary, a much improved place, when they have minor illnesses. They are provided with opportunities in the hospitals connected with the school when their illnesses are more serious. It did not seem to the Faculty of the Medical School that medical students should have less adequate medical care than students in other divisions of the University, and it has seemed to us that medical service to the students offered an opportunity not only to improve their health but also to do some peculiarly effec-

tive teaching. An example of expert and understanding care is apt to make a very deep impression on a sick boy or one in difficulty.

The faculty was so impressed by this possibility that it decided to give up the Adviser System until it had determined whether or not the Student Health Service was in some degree to take the place of the Adviser System. The reorganized Student Health Service has now been in effect for two years, and it apparently has taken the place of the Adviser System, at least in some respects.

There is one problem about the students that I would like to report to you because it disturbs us. That is the number of students who find it necessary to spend a large amount of time earning their living while they are in School. At least forty per cent of our students must acquire, during the year, a considerable portion of the money it takes to go to the Medical School. This necessarily has an adverse effect on the students' work, and may have an adverse effect on their health. There are in the School, as you know, a certain number of scholarships, a certain number of student fellowships, and a considerable amount of money to lend to students. These are used up to the hilt and they are extremely useful things. Many of them are capable of expansion. In my opinion, more scholarships are more important than more loan funds. And also in the opinion of the Faculty, the scholarships of the type of the National Scholarships are the most effective sort.

We are happy in having in the Medical School now enough National Scholarships given by the generosity of Dr. D. F. Jones and Mr. Harkness so that we can admit two or three National Scholars to the Medical School each year. This means that after we have been running four years we will have ten or twelve men in the Medical School who are supported by National Scholarship funds. But the situation would be very much better from the point of view of medical work and the

training of men if we were able to award ten or twelve or even fifteen of these National Scholarships per class.

I would like to take some time to discuss the method of granting them, the principles on which the awards are made, but it would take too much time. I can not, however, leave this paragraph about students without saying a word about their general quality. They seem to me a very impressive group of men, and I believe them to be deeply and enthusiastically interested in medicine.

Students, however, are not the only people of importance in the school. There are also old friends like Tom Bonney, who is still, I am glad to report, limping briskly about, a little grayer about the temples than he formerly was. Then, too, there is Henry Martin,\* still manipulating his pipe and giving out reagents.

Then, to be sure, there is the Faculty and teaching staff—when all is said, the fundamental essential of a great school. I do not need to tell you about the Faculty of the Harvard Medical School. I want to refer to one or two points about them in general. One is to make a very brief parallel observation as to the observations I made about the students' origin. One is impressed, especially one who has been away from the Harvard Medical School, to find the Faculty as varied and representative a group as the student body. It seems to me that the Harvard Medical School of 1938 represents at the same time the fine traditions of Boston medicine and the fact that Harvard is a national Medical School.

Let me simply refer to certain recent important appointments in the Harvard Medical School as indicating the geographic range, from which our teachers are drawn. First, Dr. A. Baird Hastings came to Harvard from the University of Chicago in 1935. The next appointment was the promotion of Dr. Alexander Forbes in the Department of Physiology. The next one was the appointment to an

Associate Professorship in the Department of Pharmacology of Dr. Otto Kraye, who had his original training in the University of Berlin and who came to Harvard College from the American Medical College in Beirut.

Yesterday there arrived in Boston to take up his duties as Professor of Preventive Medicine and Epidemiology Dr. John Gordon, formerly Health Officer of Detroit, who has been for three years in Roumania working for the International Health Board. The distinguished work of Dr. William B. Castle has led to his lately being made a Professor of Medicine; and finally Dr. Alan R. Moritz comes to us from the Institute of Pathology in Cleveland to be the new Professor of Legal Medicine, and the successor of Dr. Magrath.

The second point to make about the Faculty seems to be quite as important as their geographical origin, and that is that it is an extraordinarily cooperative group of people who have that great characteristic of being vitally interested in training of students. They are willing to work for the interests of medical science; they are willing to work for the Harvard Medical School, and they are really interested in teaching for itself.

You are going to hear a good deal about the teaching in the Harvard Medical School from my three colleagues. There are one or two points that I would like to make about teaching in general. One is about the quality of clinical teaching. One sometimes hears the suggestion that because there is more science in medicine today than there was forty years ago, that there is less humanity and that the patient has now somehow been lost sight of. I do not think this statement will stand analysis in relation to the teaching in the Harvard Medical School. As I see the matter, the student in the Harvard Medical School today is brought into very much more intimate and productive contact with the patient than he was twenty years ago. His relation to the patient is one of more responsibility than it was; he is expected

\* Deceased. See BULLETIN of June, 1938 (editor).



not only to know more but to do more, and he spends a very large share of his time in the last two of his years working as a junior but responsible member of a team of people occupied in the care and treatment of patients suffering from disease.

Now as to the curriculum, that hardy perennial that always comes up in the discussions of medical education: I will only point out about that that the general form of the curriculum as reported in the catalog has changed relatively little. I do want to emphasize, however, that within the framework of this box system that for many years has existed in the Harvard Medical School, the curriculum is pretty flexible. I don't think two courses are ever given the same in successive years, and there have been really profound changes without any alteration in the series of "caissons" into which the medical curriculum is divided.

One more observation only in regard to the general aspect of the Harvard Medical School, which refers to a matter which seems to me of great importance. The Harvard Medical School buildings were built in 1903. They were ready for use in 1906. The Medical School at that time was apparently conceived of as consisting of a series of institutes, each with its own library, its own lecture room, and its own splendid isolation. It seems to me quite as important for medicine as it is for the school that the changes that have taken place in the last twenty-five years have led to a great development of cooperation and mutual interaction between the departments of the School. Research and teaching have both become cooperative undertakings to a very high degree. Much more of that in subsequent papers!

Quite as important as this, through the leadership of the President, the Medical School is now enjoying a much more close and productive relationship with the rest of the University than it has ever done before. It would be nice if we were geographically nearer the University, but iso-

lation is much more apt, within limits, to be spiritual than it is to be geographical. and I am glad to be able to report to you that the Medical School is part of the University in a real and active sense. I could say a good deal about our relations with the hospitals, which are extremely important, productive and cordial.

I haven't said a word about the future. This does not imply lack of interest in it. There are hopes and there are plans. We try to be aware of needs in new directions in medical education, but I am dealing particularly with the present situation in the Harvard Medical School.

Perhaps I may mention three general principles in closing: The selection of students superior in character as well as in intellectual capacity; the exposure of these men to the stimulus of working with wise and inspiring teachers; of teaching by example rather than by precept. We hope that there is also appreciation of the fact that four years in the Medical School is only a single chapter in education, a chapter that must be properly related to what goes before in College, and that must lead, if it is really successful, to the habit of continuous self-education after the Medical School is left behind.

CHAIRMAN THOMPSON: We are all delighted to hear from Dr. Burwell, and I may say that he and Mr. Little, the Secretary to the University, have been very generous in helping us arrange this program. Wherever I go, wherever I see members of the Faculty, I hear nothing but the most favorable reports about Dr. Burwell's appointment as Dean of the Medical School.

We are also very glad to have with us Dr. Hastings, whom we all regretted to see leave Chicago. Chicago's loss is Harvard's gain. Dr. Hastings, Professor of Biological Chemistry, will talk on "Trends in Pre-Clinical Teaching."

DR. A. BAIRD HASTINGS

*Trends in Pre-Clinical Teaching*

DR. A. BAIRD HASTINGS: Dr. Thomp-

son, Members of The Harvard Clubs, the many friends I see in the audience, and guests: It is a dangerous thing for a biochemist to enter a clinical arena. He never knows whether he is to be damned or deified.

It is with diffidence, born of ignorance, that I undertake the responsibility of joining with you this afternoon in this symposium on certain phases of medical education as practised at the Harvard Medical School. I believe that it was Dr. Weir Mitchell who once said, "I am well aware of the treachery of the tongue and I, therefore, much prefer the loyalty of the pen." In subscribing to this sentiment and following its precept in the interest of brevity, I shall confine my remarks to manuscript. I must confess at the outset that although "Trends in Pre-Clinical Teaching" is a subject on which I have pondered, my investigations are neither extensive nor complete. It represents what I should like to know rather than what I do know.

This title, "Trends in Pre-Clinical Teachings," immediately raises the questions of (1) what is the primary function of the pre-clinical subjects and (2) how well is that function being served. I can not pretend to give an answer to this in fifteen minutes. As a basis for my further remarks, however, I shall venture a direct and radical statement on this point. The function of the so-called pre-clinical subjects is the same as that of the clinical subjects—namely, to prepare the medical student with the factual knowledge and the habits of logical thought necessary to the study and treatment of disease. The implication of the term, "pre-clinical subjects," is most unfortunate. It connotes to the student that he is at the water's edge, but must undergo further restraint before he can be immersed in medicine. It is difficult for him to realize that his understanding of disease will be proportional to his understanding of normal physiological processes. One hears frequent complaints from clinical professors that the

students seem to be deficient in knowledge of subjects in which they should have acquired proficiency during their first year. Usually, it is found that the students had learned in their first year, but forgotten by their third. This commonplace observation led me to examine the question: What is being done at the Harvard Medical School to emphasize to the students the interrelation of the subject matter of the different departmental divisions? I can report to you only a few examples of the many concrete efforts which are being made to accomplish this end.

In order to acquire data to present to you, I first consulted Professor Wislocki, of the Department of Anatomy, regarding what he would consider to be the present trends in the teaching of Anatomy. I have condensed his reply into the following statement: There is a tendency for the boundaries between Anatomy and Physiology, and between Anatomy and Biological Chemistry, to be less well defined than formerly. This is particularly true in the special fields of endocrinology and of neurology, where the morphological and functional approaches are intimately interwoven. He also spoke of the great advances which have recently been made in the application of micro-chemical methods to histological problems, thereby opening up new fields of interest both to the histologist and to the biological chemist. An attempt is made to familiarize the medical students with the interesting new developments.

In response to my question, "What is being done at the present time to relate the study of anatomy to clinical problems?" he told of three special sections which have been arranged for the students in addition to their regular instruction in Anatomy and Histology. These sections consist of the presentation of selected neurological cases at the Boston City Hospital, certain clinical problems of embryological interest at the Children's Hospital, and of Saturday morning surgical clinics at the Peter Bent Brigham Hospital. In addi-

tion, a seminar for a few students with neuro-physiological interests is conducted by faculty representatives of Physiology and Anatomy. He emphasized, however, that this additional work is carried on without sacrificing the fundamental instruction in Anatomy and Histology.

I then consulted Professor Cannon of the Department of Physiology. His statement of the trends in the teaching of Physiology was to the effect that he would regard the evolution in the laboratory instruction from the use of lower to higher forms of experimental animals as important, but more important still the greater emphasis now placed on understanding the organization of the animal as a whole. In most medical schools early in this century great attention was given to the study of the reactions of amphibian muscle to electrical stimulation. During the intervening years, there has been a progressive change of emphasis in Physiology, so that less time is devoted to the twitching of frog legs and more time to the study of physiological systems of mammals and, when possible, of man himself. Indeed, I noticed upon looking in on some of the students in Physiology this year that, instead of recording the electrical reactions of frog legs, they were recording the electrical phenomena associated with their own cortical processes.

One point brought out by Dr. Cannon, which interested me particularly, was a remark similar to that of Dr. Wislocki, that there is crumbling of the walls which separate Physiology from the other pre-clinical sciences on the one hand, and from the clinical sciences on the other. He illustrated this by citing the course entitled, "Application of Physiological Principles," given to the first-year men and organized by the Department of Physiology in collaboration with Dr. Blumgart, of the Department of Medicine. Weekly clinics are held for the students in this entirely voluntary course, the clinics being on subjects which have just been discussed in Physiology. Here are a few of the clinical

subjects included this year: Congestive failure, heart block, auricular fibrillation, angina pectoris, edema and nephritis, and diseases of the thyroid. Practically all of the first-year students attended these clinics. It has proven to be an excellent way in which to arouse a realization of the clinical importance of physiological processes and crystallize the important aspects of the subject without compromising the fundamental character of the teaching. In addition, Dr. Cannon and I have undertaken, in certain specific instances to which I shall refer again later, to coördinate the work in Physiology and Biological Chemistry.

I visited members of our faculty in other pre-clinical departments and, in addition, consulted some of my colleagues at other institutions. Time will not permit me to recount to you their remarks in detail. What I should like to report, however, is that there is widespread realization today of the importance of relating the facts obtained in individual pre-clinical disciplines not only with each other but with the clinical sciences as well. The era of excessive pride in artificial intellectual boundaries based originally only on convenience seems to be passing.

In the few moments left to me I should like to consider some of the trends in Biological Chemistry. For the first thirty years of this century, during which the science of Biological Chemistry was growing into an independent discipline, great attention was, of necessity, paid to the development of methods which required only small amounts of material without compromising their accuracy. Unfortunately, these methods were sometimes applied with more zeal than discrimination. Everything was fair game for the analyst. However, it was essential that accurate knowledge first be obtained of the normal composition of the fluids and tissues of the body before chemistry could be of much service in disease. This was the analytic or descriptive phase of Biological Chemistry. The strides which have been made,



have in some respects, been remarkable, and much of the success in this field we owe to ingenious and accurate methods devised by the late, beloved Professor Folin of our Department, Professor Benedict of Cornell, and Dr. Van Slyke of the Rockefeller Institute.

However, one becomes aware in recent years of a change in interest. The time has apparently arrived, in Biological Chemistry, when it is possible—indeed it is imperative—that we try to put things together; that we try not only to accumulate information regarding the concentration of normal and abnormal constituents of the blood in health and disease but that we attempt to interpret total physiological and pathological disturbances in terms of the chemical processes involved. In other words, we are in transition from an analytic phase to a synthetic phase of our science. I need only to cite the advances made in understanding carbohydrate metabolism, acidosis, alkalosis, dehydration and edema to recall to you instances where the synthetic approach has already been of practical value. From the rapidity with which our knowledge of the role played by hormones and vitamins in the enzymatic processes of the cells is being accumulated, it is only a matter of time until one may add to this list those disturbances which concern oxidative processes in general. Perhaps I am over optimistic in believing that these important advances will be made within the near future, but I feel they represent definitely the trends of Biological Chemistry today.

How does this affect the teaching of Biological Chemistry at the present time? In so far as our Department at the Medical School is concerned, we have oriented our lectures toward questions of medical significance without introducing any drastic changes in the subject matter itself. We are still concerned with the teaching of the fundamentals of Biological Chemistry from the standpoint of the chemical composition of the tissues of the body and the metabolism of the chemical materials in-

volved. In our lectures, however, we have, as occasion permitted, drawn a clinical moral to give point to the subject under discussion. In addition, this year we were fortunate in being able to enlist the services of Dr. Townsend, of the Massachusetts General Hospital, who, at the conclusion of our lectures on acidosis and on carbohydrate metabolism, held a clinic on diabetes. It was both surprising and comforting to find that this single clinical lecture aroused a great deal of interest on the part of the students in subsequent portions of the course which were of much less immediate clinical interest.

However, to my mind the most important trend in Biological Chemistry today is one of which we can not as yet take full advantage. This is the development of a new division of chemistry which is sometimes called, "Quantitative Clinical Chemistry." It is not a subject which can be presented at the present time to first-year medical students, but one looks forward to the time when it will be taught to students in their more advanced years. One has only to browse through the two-volume, 2,000 page work of "Quantitative Clinical Chemistry" by Peters and Van Slyke to become aware of the importance of this subject to clinical medicine. Our efforts are directed toward preparing the students to utilize intelligently this rapidly accumulating chemical knowledge of clinical importance.

And now I should like to bring you the results of my interview last week with the oldest member of our Department. I refer to Henry Martin, whom many of you doubtless remember. In view of the fact that he has passed out unknowns to forty-three Harvard classes, I regard him as highly competent to discuss "Trends in teaching Biological Chemistry."

"You must have seen many changes in your period of service, Mr. Martin," I suggested.

"Well, I wouldn't say that things had changed very much," was his surprising

reply. "When I came in '95, Professor Wood was interested in blood. Then Professor Folin introduced a lot of work on urine in 1908, and now we've got blood work in the course again. No, I wouldn't say that there had been much change!" From Henry Martin's point of view, our trend in Biological Chemistry seems to be circular!

Well, it is true that the changes we have introduced in the laboratory have not been drastic. I shall mention three which illustrate our efforts to correlate the subject matter of the pre-clinical sciences with clinical interest:

1. We have decreased the amount of time devoted to urine analyses and have introduced methods widely used clinically in blood analyses. Some students find time to apply them to physiological experiments on animals.

2. In collaboration with the Department of Physiology, we have introduced a two-week period of intensive work on the subject of metabolism, respiration and disturbances of the acid-base balance. It is carried out jointly in the two departments. This has proved so successful that we hope to extend this experiment to other physiological fields as soon as practicable.

3. By decreasing the required work in the laboratory, we have given the better-trained students an opportunity to engage in special problems which interest them. For example, this year some chose to work on vitamin deficiencies, some on endocrine deficiencies, and some on salt disturbances.

In view of the rather wide differences which exist in our classes in their individual scientific preparation, it seems desirable to encourage independence of activity in so far as our personnel and laboratory facilities permit.

I said at the beginning of this section that we had passed through an analytic phase of our subject and are now embarked upon the synthetic phase. Professor Lawrence Henderson has pointed out that it is characteristic of scientific subjects that

they oscillate alternately between periods of analysis and periods of synthesis. The pre-clinical sciences seem to be no exception.

Although generalization on a subject with as many factors as has that which I have been discussing is always dangerous, and apt to be only partially true, I, nevertheless, present for your consideration the following hypothesis:

The present generation of first-year medical students is acquiring the habit of using Physiology in Anatomy, Chemistry in Physiology, and both Physiology and Histology in Chemistry. This break-down of the hard and fast divisions between the sciences of the first-year is, I am told, true also for the second-year subjects of Bacteriology, Pathology and Pharmacology. This is what I mean when I say that our pre-clinical sciences are in a synthetic rather than an analytic phase.

It is to be hoped that the development of this habit of continuity of thought and the use of scientific information from course to course and year to year can be fostered through the clinical as well as the pre-clinical years.

CHAIRMAN THOMPSON: Dr. Walter Bauer, Associate Professor and Tutor in Medicine, will talk on, "The Tutorial System in the Harvard Medical School." Dr. Bauer and I were at the Massachusetts General Hospital at the same time. He is a very good example of the fact that the Harvard Medical School is a national Medical School, because Dr. Bauer graduated, I believe, from the University of Michigan.

He reminds me of a very interesting story which I always like to tell. Shortly after I moved to Chicago one of the young men took me aside and said, with a very solemn expression on his face, "Thompson, the chief trouble with you is that you come from Boston." I assured him that I did not, that I was a poor struggling Canadian, that all I had done was to spend ten years in Boston, which everyone knows could never make anybody a Bostonian. But the

trouble was that I had been connected during those ten years with a place called Harvard, and in the opinion of this dear gentleman that meant that I could not be quite right. There was bound to be something the matter and he thought he would let me know about it.

I was very glad to hear Dr. Burwell point out that the Harvard Medical School is not a local medical school but a national school, both from the standpoint of its faculty and from the standpoint of its student body. Dr. Walter Bauer, who is in part a Michigan product, will now tell you some of the things they are doing in the tutorial system.

#### DR. WALTER BAUER

##### *The Tutorial System in the Harvard Medical School*

DR. WALTER BAUER: Dr. Thompson, Alumni, and Friends: Experimentation in medical teaching is equally as important as experimentation in medical sciences if we are to improve our methods of teaching and allow for the fullest development of the superior student as well as the mediocre one. Nineteen years ago, Harvard Medical School came under the leadership of Dr. David L. Edsall, a true experimentalist. That he should be so designated seems most appropriate because he made important contributions to the medical literature, fostered the establishment of clinical research in the leading medical institutions of the country and increased the prestige of the group of institutions which constitute the Harvard Medical School. It was he who introduced to the Harvard Medical School in 1922 an innovation in medical teaching, a modified form of the Oxford preceptorial or tutorial system.

I think we will all agree that the chief function of a medical school is to foster growth and change in the direction of an ideal. We desire medical students possessing the spirit of adventure, of inquiry and of experiment as well as the desire to learn the art and science of medicine. A child's natural impulse to investigate its

surroundings probably represents a phase of the unconscious instinct for self-preservation. This native confidence to observe and to reason is frequently short-lived and is all too frequently discouraged in the average elementary and general institutions of education because they strive to raise the level of mediocrity. Because of exposure to such educational methods, the average student soon tends to believe only what he reads or is told, failing to appreciate that what he reads or hears, in so far as it is true, represents adventurous contacts of men in the past. It therefore becomes the primary necessity of a medical school to re-awaken and to stimulate the natural curiosity to learn and thus to promote the spirit of scientific investigation so necessary for the practice of good medicine and research in the medical sciences.

Dr. Edsall believed that the power and biological effectiveness of the brain cells of a medical student depend in part upon the stimuli to which they are subjected. He willingly granted that some students of superior intellect were readily detected. He was of the belief, however, that each class contained a few men labeled students without promise who when exposed consciously or unconsciously to certain intellectual stimuli were transformed into students of promise. It was his hope that the introduction of the tutorial system into the medical school would make possible more such transmutations as well as to allow for the development of more intellectual independence, initiative, curiosity and boldness in students of medicine. He well appreciated that so radical a departure from an established method designed to be the best for the majority was somewhat of a gamble, particularly if many of the students exposed to such educational experimentation fared worse than if they had continued in the well-established conventional routine. Being a true experimentalist, he did not allow the fear and disapproval of many faculty members to deter him from his original contention that the exceptional students should be allowed to



develop their individuality and personal powers of scholarship and initiative. Dr. Edsall chose well when he selected Dr. Alfred Redfield as the first chief tutor. Dr. Redfield's ability to detect and bring out the abilities of obvious or undiscovered exceptional men is well attested to by the men chosen for tutorial work in the first five years of its existence.

The system as originally outlined was to allow for four tutors, one each in physiology, pathology, medicine and surgery. The allotted budget has never permitted a tutor in pathology. The students chosen are those showing evidence of superior capacity who, in addition to their required work, are desirous of and capable of doing extra and advanced work along some definite line in any one of the medical sciences or major divisions of medicine. As a pure experiment a few mediocre men have been chosen from time to time. The tutor does not attempt to direct the work of each man but does place him in contact with the particular member of the faculty best fitted for his needs. In consequence, men are placed for work in anatomy, physiology, biological and physical chemistry, pathology, medicine and surgery.

It is not the purpose of the tutorial system to wean men away from medicine into medical sciences, but rather to aid in what must become more and more a general object of medical education, the sending into medicine of men with scientifically trained minds. The majority of men exposed to this system plan to practice medicine. Emphasis is placed on experimentation, because of all scholarly disciplines, it seems best fitted to attract the interest of the student. Original discovery and its publication are stressed only because these objects in experimentation convert discipline into a goal worthy of pursuit for its own end and confronts the student with the reality of the advancement of knowledge.

While it was not the original intention to have men in the first year of the medical course participate in the tutorial system,

it has already proved practical to include them, and indeed desirable to devote considerable effort in preparing men during this year for further participation in the system. Those first-year medical students who have had some previous training in physiology or other medical sciences are permitted to work at original problems in the laboratory.

The men ferreted out of the first-year class by the physiological tutor are encouraged to work under the tutorial system in their second and third years, in the spare time afforded by the two free afternoons provided some years ago by the rearrangement of the curriculum. The accomplishment of some men is negligible for one reason or another, but the system has demonstrated that, if given a suitable problem to work upon very creditable achievement can be made by a determined student in the available time in his second and third years. In handling such students it has been held advisable to avoid organized series of lectures or conferences or any other form of group instruction, as the regular curriculum already affords an excess of this sort of intellectual exercise. Each student or pair of students is given a problem to investigate. Experience has shown that it is better to give a very definite problem for immediate experimental attack to be followed by wide reading rather than to reverse the process.

Some of the men do continuous research work along a specific line throughout their four years in medical school. In the fourth year, the faculty permits a limited number of men whose cases are individually approved to have much freedom in the use of their time. This may amount to as much as four or five months. In most instances the students electing tutorial work anticipate most of the prescribed regular work by taking two or three months of summer work. Many of the fourth year students continue with advanced work in the medical sciences as a preparation for their future clinical work. The other fourth year tutorial students work in the

laboratory on clinical problems concerning patients under the direction of a member of the faculty of their own choosing. In such instances they may become a member of a research group, thus gaining intimate contact and experience with the many aspects of the particular problem. In the laboratory, no effort is made to suppress opinion, but open consideration of all problems worthy of discussion is invited. It is impressed upon the student that the laboratory is not a sanctuary for the worship of authorities or heroes, but a free dwelling for students of medicine conscious of the faults and the virtues of those who surround them.

During the fourth year, informal weekly conferences are held where topics of the students' choosing are discussed with the tutors or various members of the faculty.

Although sufficient time has not elapsed to allow us to determine the fate of all students subjected to this type of medical teaching, it would seem fair to examine the records to date of the sixty-two men from the classes of 1925 to 1929 inclusive. Four have died. Thirty-four of the remaining fifty-eight graduated with honors. At the present time, we find that fourteen of the thirty-four are in full-time work, six having remained in the medical sciences. The other twenty men are engaged in practice, twelve of them being actively associated with teaching hospitals. Of the twenty-five men who graduated with a grade of C, seven are in full-time work, eighteen are practicing medicine, and nine of these are members of teaching hospitals. Although the above series is small, the results to date would seem to suggest: (1) that medical students can engage in special extracurricular work along one line without jeopardizing their regular work; (2) that although men of superior capacity perform better than do men of mediocre ability, the latter group benefit from this type of teaching; (3) that a large percentage of the men exposed to this type of scientific training contribute to the advancement of medicine and medical teaching.

Many interesting experiences have been encountered a few of which might be mentioned. Several of the men became sufficiently interested in physiology and biochemistry to take off a year or two for concentrated work in these fields before continuing with their regular medical curriculum. All of these men returned to the field of medical sciences upon obtaining their M.D. degrees. One is at present professor of physiology at one of our leading medical schools. Several of the men selected because of exceptional records in college proved difficult for a time because of their inability to correlate, to eliminate and to dig out facts suggested in their problem work. At first these men tended to spread themselves too thin. It was found, however, that experimentation requiring exacting measurements served as an excellent discipline for this type of mind.

Another man entered the medical school after a year's work in a New York bank because he desired a career of some intellectual interest. It was soon found that he considered his training in chemistry extremely deficient, and in addition, he greatly under-estimated his mental ability. This attitude and his much feared deficiency in chemistry gradually disappeared as he found himself capable of carrying out detailed chemical experiments. He is at present an assistant professor of pediatrics and has made extremely worth-while contributions in inorganic salt metabolism. Many similar experiences might be related, but these few examples serve to strengthen Dr. Edsall's original contention that men of real capacity may go undiscovered if an effort is not made to find them.

Some of the men did not enter tutorial work until their fourth year. This group was equally enthusiastic. They considered it extremely worth while because it not only enabled them to participate in investigative work but also because it made possible intimate contact with a faculty member and gave them a better insight into the problems of a particular field. In

many instances this short exposure was sufficient to aid the student to verify a previous suspicion, namely, that he liked experimental work and was sufficiently adapted to it to want to continue with it in some degree in his future work.

Some of these men have since stated that the most important decision they made in their medical school career was that they should do what they had always thought wrong; i.e., to depart from the schedule the faculty had made and to take free election of their fourth year work. The accomplishment of some of these men to date is good evidence that if superior men are allowed such privileges they can not only meet the routine requirements with ease but also establish a sound base upon which to build their future careers.

It is hardly necessary to remind this audience that those who practice medicine may advance scientific medicine as effectively as the worker in the cloistered laboratory. Surely such advancements will be equally possible by the practitioner of medicine who has been sufficiently exposed to scientific research to allow for the development of intellectual independence, initiative, curiosity and boldness. The developments of such traits in the practitioner of medicine should in no way interfere with his practice of the art of medicine, so necessary for the comfort of the patient.

CHAIRMAN THOMPSON: The last paper on the program will be, "The Surgical Curriculum of Today," by Dr. Elliott C. Cutler, Moseley Professor of Surgery. Dr. Cutler has been kind enough to come out here in spite of a very severe bursitis. We are glad to have him with us.

#### DR. ELLIOTT C. CUTLER

##### *The Surgical Curriculum of Today*

DR. ELLIOTT C. CUTLER: Medical education should be planned in relation to the demands made upon the general practitioner of medicine. He is the one who serves the greatest number of sick people, and the curriculum of a medical school should be organized so as

to prepare him fully for the type of work he will have to perform. This means essentially that specialization is a matter for postgraduate education, and need not be a major concern in establishing the curriculum. The demands made upon the general practitioner of medicine will determine the two important factors in the curriculum: (1) the content, that is what is to be taught, and (2) the time allowed to the separate topics into which the teaching in a medical school is necessarily divided.

The best data available today as regards what the general practitioner does come in contact with in this country and in Great Britain are assembled in the final Report of the Commission of Medical Education, published in 1932. Here in Table 38 we notice that 20.6% of all diagnoses reported by general practitioners in a large study were minor surgery and that 31.6% were definitely surgical diagnoses. Table 49 which compares the demands for medical education in Great Britain with the demands in the United States and Canada shows almost the same figure for Great Britain. Thus 18.1% of the visits to a general practitioner of Great Britain were for minor surgery. A good many studies of this type have been carried out, and one is impressed that somewhere around 25% or more of the general practitioners' work is surgical. This is exclusive of obstetrics which is necessarily a surgical form of treatment.

With this background the demands upon the department of surgery in a modern medical school should be clear, that is, that all students in the medical school should be taught enough of the principles which underlie surgical practice so they can care adequately for minor surgery. This teaching must consequently include (a) education in anesthesia and (b) experience with all forms of trauma and infection since these are the chief constituents of minor surgery.

It is an unfortunate truth that anesthesia is perhaps the most neglected and poorly



taught subject in the medical schools of the United States, and yet it is a necessary complement to every surgical ordeal. Any doctor who has no training in anesthesia and happens to become involved in a serious accident on a train, an airplane, or an automobile is in a sorry predicament. The teaching of anesthesia should extend through the whole three years of the time given to the department of surgery, beginning with didactic discussions which elaborate upon the previous pharmacological knowledge, then practical experience on animals, and finally experience in giving anesthesia to human subjects in the last year of the medical school course. Instruction for the care of trauma and sepsis takes place largely during the third year or fourth year of the students' curriculum, depending upon whether the individual school teaches dispensary or out-patient department practice in the third or fourth year. The dispensary or out-patient department is the ideal place to show to the young student the common forms of trauma and infection. In particular, the student must realize the dangers of simple surgery. Two days ago I was consulted concerning a man who was dying of staphylococcus septicemia. He was a strong individual, a policeman who had had a simple carbuncle on his neck. The general practitioner presumably had drawn his knife through the badly infected area into the fresh area unwallled off by nature's own processes, and there immediately followed chills, high fever, and a classical picture of septicemia. Undoubtedly the knife had carried bacteria from within a walled-off area to an unprotected zone. This simple accident expresses vividly how important it is that the surgical teacher should know bacteriology and immunology which are the very feet upon which the art of surgery stands. But in addition to sepsis the students must learn how to care adequately for trauma. Fractures must be a chief concern in the education of every doctor. He will see them daily in his practice, and as vehicles of loco-

motion progress at ever increasing rates, this form of ailment will become more frequent.

Finally the surgical curriculum must include the care of those diseases which may be benefited by surgical therapy. The student should know the role of surgery in the care of intra-abdominal tumors and infections. He should know both the limitations as well as the possibilities of this therapy. But it should not be the duty of the surgeon to teach to the undergraduate medical student the techniques for major surgical practice. These matters are a concern for postgraduate education, and it is quite just to demand that the young surgeon should spend five to eight years after graduation in training. In fact it is a sorry commentary upon the state of civilization and the laws of our country that the young medical student, fresh from graduating from a medical school, is still legally permitted to perform major surgical procedures. It is to be hoped that by joint action of the Council of Education of the American Medical Association, the State Licensing Boards, and the election to the Board of Certification in Surgery, we shall soon see further protection against this happening.

If one now comes to examine the intricacies of the surgical curriculum, how it may be carried forward, how the surgeon may be made best use of in his medical school, the following proposals may be of interest:

(a) In the first year while the teaching of anatomy is progressing and in order to show the student the value of his anatomical instruction and to stimulate him to a greater interest in this vitally important fundamental subject, the department of surgery can advantageously give a weekly clinic on patients to demonstrate disorders of the very parts the student has just been dissecting. We have found this of enormous value, and it has been welcomed by our anatomical colleagues. Thus when the student dissects the hand he might well have a clinic given in which

the hands of dwarfs and giants were shown and those upon which neurological lesions and accidental injury had left their impression.

(b) When we come to the second year, it is customary that time be devoted to the propaedeutical courses of medicine and surgery. These include history taking, physical examination, and in surgery some familiarization with the principles of surgery, sterilization, the relation of bacteria to surgical infections et cetera. In this introductory course the student should begin his anesthesia training by putting animals to sleep. He had best learn that the body is not dried, formalized tissue such as his pathological teacher has shown him, but living drops of water and blood, by making an incision into the skin of an animal after he has learned how to sterilize properly all the materials to be used at the operating table and rendered himself aseptic. A worker for the publication *Life* who was discussing with us the other day the means of educating the public as to the advantages of animal investigation and study thought that the training of the young surgeon in the surgical laboratory was the best plea in favor of doctors' being allowed to use animals. He said, "My little girl may be hit on the street any day by an automobile and need immediate surgical care. I would wish that before some young doctor practised upon her he had first learned the principles upon an animal."

(c) When we leave this second year and go to the third year the students will be split up into small sections and have two or three months' experience in outpatient departments or surgical dispensaries looking after patients who are the seat of trauma or infection. Here the young student should assist in minor procedures; learn how the anesthetics are given and practice them; learn how bandages are arranged and understand thoroughly the principles of support and immobilization as applied to both trauma and infection. He should see in this year not

rare diseases but all the simple disorders, and his teachers must take care lest their interest in gastro-intestinal work or brain tumors leave them no time to teach about fistulae, boils, carbuncles, and broken digits. It is important that the better teachers be in the dispensary, for here the young student is inculcated with his ideals. Here will be seen the septic hand in its early stages which if badly treated leaves a family destitute, as the breadwinner loses his capacity to continue to work through poor surgery.

(d) Finally, in the fourth year the student will learn by living close to his patient in the hospital more about in what types of disease major surgery may be utilized. He should come to appreciate more and more the importance of *individualizing* cases, should have a proper concern for the risks the patient takes, should learn to evaluate the effect of hospitalization upon people, and should follow a certain number of his patients into their homes to observe them until they are restored to an active, working existence. The surgeon is frequently casual in his appreciation of the long recovery period. He too often accepts an anatomical readjustment as satisfactory and totally misses the great cost of his procedure in time lost to his patient.

Such a curriculum is now in force in the Harvard Medical School. During the period of anatomical study, first year, a voluntary course given on Saturday mornings permits the student to visualize in the living his teaching in the dissecting room. Our anatomy teachers are greatly pleased with the stimulus to the students, and from the students' point of view, it is very popular. This year 180 students were counted in the amphitheatre at the opening lecture, and a little discreet inquiry revealed a large number of students from other medical schools. The success of this course has led Doctors Bremer and Lewis who teach embryology, to ask an instructor at the Children's Hospital to give similar exercises on living examples of an-

omalies while the instruction in embryology is proceeding.

We must remember that the young student goes to Medical School full of enthusiasm to care for the sick and that it is a mistake to let this enthusiasm die down in the first two laboratory years. In the second year the introductory course in Surgery covers the principles of surgery or the methods by which we avoid pain, infection and hemorrhage. This is accomplished by ward rounds, laboratory exercises using dogs, a course in bandaging and apparatus, and a considerable period of time devoted to fractures. Further, the students are acquainted with certain implements of precision, such as the otoscope and ophthalmoscope, that they may learn the method before their interest is distracted by a sick patient. By teaching the students how to run sterilizers, to make and sterilize linen goods and gauze, and to be gentle and neat with animals, we undoubtedly avoid calamities in the future.

In the third year one lecture a week covers regional surgery, merely a skeleton upon which to hang teaching and reading. This series of lectures parallels a course in medicine. Thus while the physician lectures on tuberculosis and pneumonia, the surgeon discusses tumor of the lung, empyema and abscess of the lung to permit the student to continue his reading in the same anatomical field. During this year also the class is broken into small sections which attend the out-patient department daily where they become familiar with minor surgery. Special attention is devoted to trauma and sepsis, to desensitization before the injection of tetanus antitoxin, et cetera.

In the fourth year the students are clinical clerks in surgery for two or three months. During this period they are practically junior internes in the wards, taking histories, and doing physical examinations, and in the operating room scrubbing up as second assistant upon their own cases, and giving a certain number of anesthetics.

This curriculum is time consuming for the teacher, since it individualizes both the student and the patient. Our friends in Edinburgh and Stockholm are literally aghast at our efforts. We think, however, the product justifies the effort. It has been said that such effort will seriously interfere with productive scientific work. I doubt it, since history reveals that out of a busy clinic comes most of the greatest stimulation to investigative work.

However, the time has come when the experiment of putting a young man who has carried out a creditable piece of investigative work into a clinical chair is a closed book. It doesn't work, and indeed such a system has done positive harm both to the clinical and the laboratory worker. A clinician has an honorable and unique career, and we should judge him by his works in his own field not in his neighbor's. If we continue to have good clinical teachers, we shall turn out what we are supposed to turn out—*good doctors*. Certainly we shall want many of our graduates to go into the field of the medical sciences, but because our students see a meticulous, thoughtful and inspiring clinician at work it cannot be other than beneficial to them in their subsequent careers.

This is the surgical curriculum of the undergraduate student. It is set up to teach that part of surgery with which every doctor must become familiar. The teaching of major surgery is quite a different story and requires from five to ten years of intensive hospital training under competent masters, following graduation, where by a resident system there is an opportunity for the young surgeon to have personal experience.

Following these addresses, discussion was opened by Dr. Joseph T. Wearn (Cleveland, Ohio), followed by Dr. Russell M. Wilder (Rochester, Minn.), Dr. Marion Blumberg (Cincinnati, Ohio), Dr. Donald C. Balfour (Rochester, Minn.), Dr. George F. Dick and Dr. Joseph A. Capps\* (Chicago, Ill.).

\*Unfortunately, space is not available for publication of the discussion. A limited number of reprints of the symposium including the discussion is available at the Dean's office and will be sent to alumni on request.



# Report of the Twenty-fifth Reunion of the Harvard Medical School Class of 1913

The Class which graduated from Harvard Medical School in June 1913 celebrated its 25th reunion on June 18 and 19. This Class was one of the smallest classes for many years which graduated from Harvard Medical School. It entered the Medical School not long after the authorities at Harvard, under the stimulation of President Eliot, decided that a Bachelor's Degree was a necessary requirement for entrance to the Medical School. This requisite considerably diminished the number of men in the entering classes for several years, but the numbers of students in the subsequent years steadily increased long before the Bachelor's Degree was dropped as a requirement for entrance.

Nineteen men returned for the Reunion. One man flew back from the American Medical Association meeting in San Francisco in order to be present, and men from Indianapolis, Buffalo, Chicago and other places of considerable distance from Boston returned for the occasion.

The program revolved about the idea that this group wished to have a reunion and not just another medical meeting. Saturday morning, June 18, the Class met in the Faculty Room of the Medical School with Dr. C. Sidney Burwell, Dean of the Medical School, President Emeritus Lowell, who signed the diplomas of this Class, Dr. Walter B. Cannon, Dr. Elliott P. Joslin, and Dr. John L. Morse as their guests. The Class had selected these men together with Dr. Henry A. Christian, who was Dean when they were in the Medical School but who could not be present, as people whom they had enjoyed and would like to visualize again after this considerable interval. At the beginning of the meeting Dr. Elliott C. Cutler, Secretary of the Class, announced the gift of \$1,290 to Harvard University from the members of the Class. This gift was made

unrestricted in its use to the University except that its income should be devoted to the purposes of the Harvard Medical School as distinct from Harvard University. Dean Burwell then thanked the Class and pointed out that the unrestricted nature of the gift establishes a new precedent which he hoped would continue in the years to come. His welcome to the Class was warm and greatly appreciated.

The Class then adjourned to the Anatomical Building Amphitheatre, the room in which they had had their first exercise when they were students. Here they listened to talks by Professor Cannon, Dr. Joslin, Instructor in Physical Diagnosis when this Class was in School, Dr. Morse, Professor of Pediatrics in their School days, and finally by President Emeritus Lowell. President Lowell's remarks were directed towards (1) the benefits which have arisen in this School through the institution of general examinations, and (2) a challenge to the Medical Profession of today to take its place in civic work and government as did the Medical Profession in the days when the Harvard Medical School was first formed. He pointed out that it was a pity that men as highly trained as those in the profession of medicine should hold themselves entirely aloof from public affairs—so much apart in fact that the doctor of today has lost somewhat the feeling of his general responsibilities as a citizen.

The Class then adjourned to the Peter Bent Brigham Hospital where Dr. Cutler conducted a clinic in cardiac surgery. Following this there was a meeting at the Harvard Club of Boston for luncheon. Further activities led them to the Hoosic Whisick Club where golf pushed aside medical discussions. In the evening a dinner was held at which most of the members expressed some of their experiences

during the intervening twenty-five years since graduation.

On Sunday, the final day, the members together with five of the wives repaired to the home of Dr. George P. Denny at Manchester-by-the-Sea, Massachusetts, where swimming and a splendid out-of-door lunch was greatly enjoyed and appreciated.

The following people attended the Reunion:

Dr. Francis G. Blake, New Haven, Conn.  
 Dr. William P. Buffum, Providence, R. I.  
 Dr. James C. Carter, Indianapolis, Ind.  
 Dr. DeW. Scoville Clark, Salem, Mass.  
 Dr. Elliott C. Cutler, Boston, Mass.  
 Dr. and Mrs. George P. Denny, Boston, Mass.  
 Dr. and Mrs. James F. Faulkner, New York, N. Y.  
 Dr. and Mrs. John Favill, Chicago, Ill.  
 Dr. Lewis W. Hill, Jamaica Plain, Mass.  
 Dr. Francis T. Krusen, Norristown, Pa.  
 Dr. and Mrs. E. D. Leonard, Chestnut Hill, Mass.  
 Dr. William F. MacKnight, Fall River, Mass.  
 Dr. and Mrs. William R. Morrison, Boston, Mass.  
 Dr. Byron P. Stookey, New York, N. Y.  
 Dr. Abram L. Van Meter, Stockton, Cal.  
 Dr. Melvin H. Walker, Jr., Pittsfield, Mass.  
 Dr. and Mrs. Edward T. Wentworth, Rochester, N. Y.  
 Dr. John A. Wentworth, Hartford, Conn.  
 Dr. Thomas W. Wickham, Boston, Mass.

ELLIOTT C. CUTLER, '13,  
*Secretary.*

## HARVARD MEDICAL ALUMNI DINNER

A Harvard Medical Alumni Dinner was held in San Francisco, June 15, during the meeting of the American Medical Association. 125 attended and the "wild west" theme was carried out by the wearing of cow-boy hats at the speaker's table

and the distribution of red bandana handkerchiefs to all of those who attended. Also there were special menus with reproductions from an early California bill-of-fare. William J. Kerr, '14 presided and short talks were given by Roger I. Lee, Tracy Putnam, William P. Murphy and Augustus Thorndike, Jr.

## NOTICE

Mr. Francis L. Mahady, president of the E. F. Mahady Company, 851 Boylston St., Boston is anxious to complete his set of Aesculapiads. He wishes the copies for 1925, 1927 and 1928, and would appreciate it if anyone knowing where he may obtain these copies will get in touch with him. Mr. Mahady's files are available to any medical school alumnus who cares to use them for reference.

## APPOINTMENTS TO THE STAFF:

For one year from April 1, 1938:

George Austen, Jr., H. M. S. 1934, Assistant in Genito-Urinary Surgery.

For one year from September 1, 1938:

Henry Forbush Howe, H. M. S. 1930, Assistant in Surgery.

Robert Alfred Clark, H. M. S. 1934, Assistant in Psychiatry.

Samuel Lowis, H. M. S. 1934, Assistant in Surgery.

Samuel Forrest Martin, H. M. S. 1934, Assistant in Ophthalmology.

Garrett Leo Sullivan, H. M. S. 1934, Assistant in Ophthalmology.

David Hale Clement, H. M. S. 1935, Assistant in Pediatrics.

Edward Charles Curnen, Jr., H. M. S. 1935, Assistant in Pediatrics.

Andrew Yeomans, H. M. S. 1935, Research Fellow in Medicine.

George Edward Gardner, H. M. S. 1937, Assistant in Pediatrics.

## ASSOCIATION OFFICERS

Lincoln Davis, *President*  
 Lawrence K. Lunt, *Vice-President*  
 Clark W. Heath, *Secretary*  
 Marshall K. Bartlett, *Treasurer*

## COUNCILLORS

W. R. Ohler	R. H. Miller
F. C. Newton	E. L. Peirson
H. A. Lawson	C. L. Short
T. B. Mallory	G. W. Taylor
	F. S. Hopkins

## EDITOR

Clark W. Heath

## BUSINESS MANAGER

Marshall K. Bartlett

*Room 111, Harvard Medical School  
 Boston, Mass.*

## TREASURER'S APPEAL

Each graduate of the Harvard Medical School automatically becomes a member of the Harvard Medical Alumni Association. One of the unique features of this organization is that there are no fixed annual dues.

The activities of the Association are made financially possible by the voluntary contributions of its members. The advertising in the Bulletin continues to make it practically self-supporting so that funds received from the Alumni can be devoted almost entirely to activities for the benefit of the Alumni and medical students.

The dinner for the graduating class has become an annual affair. Last year's dinner was well attended and enthusiastically received by the fourth year class.

Further funds were set aside last year to provide financial assistance to medical students in cases of prolonged illness, which exceed the care provided by the Hygiene Department.

To those members of the Association who are regular contributors we wish to express our sincere thanks for their con-

tinued support. We hope that their generosity will continue and that others who have been unable to contribute in the past will feel able to do so this year.

## TREASURER'S REPORT

May 31, 1938.

## RECEIPTS

Appeals	\$2,550.50
Annual meeting	47.00
Advertising	909.80
Incidentals	3.25

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\$3,510.55

## EXPENDITURES

Bulletin	\$1,421.60
Appeals	175.80
Dinner to 4th year class	202.62
Entertainment	11.25
San Francisco meeting	38.50
Gift to Hygiene Department	500.00
Commencement fee	50.00
Annual meeting	58.00
Revising files	54.50
Salary	660.00
Typewriter repair	17.64
Incidentals	59.84
Bank charges	5.75

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\$3,255.50

Bank Balance June 1, 1938	\$2,936.23
Bank Balance June 1, 1937	\$2,681.18

MARSHALL K. BARTLETT, M.D.,  
*Treasurer.*

## COURSES FOR GRADUATES

This Department of the Medical School offers graduate courses in Medicine, Pediatrics, Surgery, Orthopaedic Surgery, Obstetrics, Laryngology, Otology and Ophthalmology, as well as summer laboratory courses in the Medical Sciences.

Some courses are designed to train specialists while other shorter courses are especially planned for those who wish instruction in a particular field.

Inquiries should be accompanied by full particulars regarding medical training, and should be addressed to the Assistant Dean, Courses for Graduates, Harvard Medical School, Boston, Mass.

## After Twenty Years

Twenty-two years ago the members of a Harvard Medical School Class, about to graduate, were asked what specialty or type of practice they had been most attracted to when they entered school four years before, and what they then planned eventually to do. Having recently found this record of youthful hopes and aspirations I thought it would be of interest to bring it up to date by finding out what had actually happened to each of the men listed.

Although this report may be of interest alike to those about to start in practice and to men who long since have found their niche, it must be realized that no conclusions can be drawn from such a small group. The Class numbered less than seventy-five. Only sixty-two are included in this statistical study. War was declared in 1917 when most of the Class were serving their internships, so that war service and post-war adjustments undoubtedly interrupted and changed the careers of many of them.

The type of practice now engaged in was tabulated from the latest issue of the American Medical Directory. Although the information thus obtained is less detailed than what might have been obtained from the more laborious questionnaire method it is undoubtedly reasonably accurate. In the tabulation men who are listed in the Directory as being especially interested in but not limiting their practices to certain specialties are classified as being in general practice.

Approximately 18 percent have achieved the goals they set for themselves on entering Medical School, that is they consistently had the same choice of practice in their first and fourth years and are now engaged in that type of work. Another 3 percent, although having different preferences in their first and fourth years, are now engaged in the specialty originally chosen. An additional 21 percent changed

their preferences during their medical course but are now in the type of practice chosen in the fourth year. This makes a total of 42 percent who in spite of the War and of the other vicissitudes of practice have kept to the courses originally charted.

27 per cent, on the other hand, consistently throughout school pointed towards a chosen specialty but are now in a different type of practice. The largest group (31 percent) is made up of those men whose first year choice, fourth year choice and present practice are all different.

Of the specialties chosen in school it is perhaps natural that surgery should have had the greatest "mortality". While 27 percent aspired to be surgeons in 1916 only 5 percent are now engaged exclusively in that specialty. Internal medicine attracted 18 percent before graduation while only about half that number or 10 percent now limit their practices to that alone. Pediatrics fell from 5 percent to 8 percent and gynecology and obstetrics from 11 percent to 6 percent. Men lost to one specialty found their way into others and especially into general practice. Only 15 percent of the Class chose general practice on graduation but the ranks have been swelled to 30 percent. The percentages of men engaged in specialties other than those already mentioned are as follows: orthopedics (chosen by only one man while at school) now claims 5, or 8 percent; public health, otolaryngology and neuropsychiatry each 5 percent; ophthalmology, urology, and medical administration each 3 percent. Radiology, anaesthesia, physiotherapy, physiology and pathology each claim one man from the Class, as did the U. S. Army Medical Corps.

As might be expected, the type of internship chosen in the fourth year followed pretty closely the interests and intentions of the men at that time. About 37 per-



cent took straight surgical appointments, 31 percent straight medical, and 16 percent mixed or rotating internships.

Two interesting facts were brought out by this study. Only three of the sixty-two men included in this list have died (two of them are included in the above tabulation). Presuming that the average age at graduation was twenty-six, the expected mortality in these past twenty-two years is, I believe, about three times the actual deaths. Furthermore the professional "mortality" is nil. All of the living members of this group are still engaged in the practice of medicine or in some allied medical science. Probably no other professional school has a like record. Either medicine has an appeal that holds us "till death do us part" or our training has so fashioned us that there is no avenue of escape.

#### WILLIAM H. BARROW, '16

##### SUMMARY

(Percentages given are approximate)

Men who consistently had the same choice of practice in the first and fourth years and are now engaged in that line of work	11 or 18%
Men who changed their preference during their medical course but who are now engaged in the specialty chosen in the fourth year	13 or 21%
Men who had different preferences in the first and fourth years and who are now engaged in the specialty originally chosen	2 or 3%
Men whose first and fourth year preferences were the same but who are now engaged in a different type of practice	17 or 27%
Men whose first year choice, fourth year choice and present practice were all different	19 or 31%
Total number of men of the Class listed	62 or 100%

##### INTERNSHIPS AFTER GRADUATION

Surgical	23 or 37%
Medical	19 or 31%
Mixed	10 or 16%
Pathology	1 or 1.5%
None	3 or 5%
Uncertain	3 or 5%
EENT	2 or 3%
Gynecology	1 or 1.5%

##### TYPE OF PRACTICE

	Preference in 1916		Now engaged in	
	Number	%	Number	%
Surgery	15	27	3	5
Internal Medicine	11	18	6	10
General Practice	9	15	19	30
Pediatrics	7	11	5	8
Gyn. and/or Obs.	6	10	4	6
None	4	6		
Public Health	3	5	3	5
EENT	3	5	2	3
Orthopedics	1	1.5	5	8
Urology	1	1.5	2	3
Neuro-psychiatry	1	1.5	2	3
Physiology	1	1.5	1	1.5
Ophthalmology			2	3
Radiology			1	1.5
Med. Admin.			2	3
Otolaryngology			1	1.5
Industrial Surgery			1	1.5
Pathology			1	1.5
U. S. Army			1	1.5
Retired			1	1.5

Two men included in above tabulation are deceased.

In the above tabulations men who are listed in the Directory as being especially interested in but not limiting their practice to certain specialties, are classified as in general practice.

#### DR. HENRY A. CHRISTIAN

Dr. Henry A. Christian will retire next September as physician-in-chief at the Peter Bent Brigham Hospital, one of the institutions affiliated with the Harvard Medical School. He was appointed to that post in 1911. In honor of his long service, a portrait of him was presented to the hospital corporation on October 13 at a gathering of 350 friends and pupils.

For five years before Dr. Christian's appointment to the Peter Bent Brigham Hospital he was physician-in-chief at the Carney Hospital, Boston. Since 1903 he has also been on the staff of the Harvard Medical School and since 1908 has been Hersey Professor of the Theory and Practice of Physic. From 1908 to 1912 he served as Dean of the School.

### NECROLOGY

'68—FRANCIS WAYLAND ADAMS died at Royalston, Mass., September 24, 1938.

'86—EUSTACE LINCOLN FISKE died at New York City, March 20, 1938.

'86—HOMER GAGE died at Shrewsbury, Mass., July 3, 1938.

'87—ARTHUR EVERETT AUSTIN died at Windham, N. H., August 22, 1938.

'88—WILLIAM WENZLICK died at Santa Monica, Calif., Sept. 21, 1937.

'90—EUGENE MARTIN HOLDEN died at Cambridge, Mass., April 9, 1938.

'92—FREDERICK ROSCOE ILSLEY died at Goose Rocks Beach, Maine, April 28, 1938.

'94—CHARLES DOUGLAS WHEELER died at Worcester, Mass., May 7, 1938.

'96—CORNELIUS JOSEPH MCGILLICUDDY died at Boston, Mass., September 15, 1938.

'98—WALTER CHANNING BAILEY died at Bernard, Vt., July 31, 1938.

'98—JACOB STEPP died at Warwick, R. I. September 21, 1938.

'01—ALVAH COCHRAN CUMMINGS died at Grand Lake Stream, Me., July 11, 1938.

'02—JAMES WALTER MYER died June 11, 1938 at Mt. Vernon, N. Y.

'02—ALBERT JAMES NUTE died at Jamaica Plain, Mass., July 25, 1938.

'03—JOHN BROMHAM HAWES, 2d died at Boston, Mass., July 20, 1938.

'03—CHARLES SHANKS died at New Bedford, Mass., August 2, 1938.

'05—LEONARD ALLEN BAKER died at Boston, Mass., August 8, 1938.

'08—SAMUEL CHESTER EVELETH died at Marblehead, Mass., June 13, 1938.

'18—ROBERT ADDISON MILLIKEN died at Little Rock, Ark., November 1, 1937.

'23—ELMER HINCKLEY HEATH died at Buffalo, N. Y., September 23, 1938.

'29—JOHN HENRY STEIDL died at Trudeau, N. Y., August 11, 1938.

### ALUMNI NOTES

'95—Henry D. Chadwick has resigned as health commissioner of Massachusetts and has been appointed medical director and assistant superintendent of the Middlesex County Tuberculosis Sanatorium, Waltham, Mass.

'98—Charles S. Butler is treasurer of the Massachusetts Medical Society.

'00—Walter B. Cannon, George Higginson Professor of Physiology at the Harvard Medical School, has been elected a corresponding member of the Royal Medical Society of Budapest.

'00—Frederick T. Lord, Clinical Professor of Medicine, *Emeritus*, at the Harvard Medical School, has been elected a vice-president of the National Tuberculosis Association.

'01—Col. Harold W. Jones, who recently served as chairman of the U. S. delegation to the 9th International Congress of Military Medicine in Rumania, has been appointed secretary-general of 10th International Congress, which will be held in Washington, D. C., in 1939. Col. Jones is librarian of the Army Medical Library in Washington.

'06—Channing Frothingham has been re-elected president of the Massachusetts Medical Society.

'12—Ernest H. Gruening, director of the Division of Territories and Island Possessions of the U. S. Department of the Interior, has been appointed a member of the National Rededication Committee.

'13—Francis G. Blake, physician-in-chief of the New Haven Hospital and Sterling Professor of Medicine at the Yale Medical School, has been appointed visiting physician-in-chief at the Peter Bent Brigham Hospital, Boston.

'14—Henry B. Richardson announces the opening of an office for the practice of internal medicine and endocrinology at 33 East Sixty-first St., New York City.

'18—James B. Moloney has been promoted to commander in the Medical Corps, U. S. Navy. He is stationed at the U. S. Submarine Base, Pearl Harbor, T. H.

'20—Joseph M. Looney has been elected president of the Chesterton Club of Worcester.

'21—John C. Whitehorn, who has been director of laboratories at McLean Hospital, Waverly, has been appointed professor of psychiatry at Washington University Medical School, St. Louis, Mo., in the department of neuropsychiatry supported by the Rockefeller Foundation.

'23—James G. Simmons was married June 30, to Miss Phyllis A. Dennison at Hingham, Mass.

'24—A son was born September 8 to Fuller Albright and Clare (Birge) Albright of Brookline, Mass.

'24—A son was born April 19, to Llewellyn Hall and Mrs. Hall.

'25—William N. Wishard, Jr., was married October 10 to Miss Carolyn L. Davis.

'26—John W. Strieder is an assistant in surgery at the Harvard Medical School, associate surgery for thoracic surgery at the Boston City Hospital and visiting surgeon in charge of the division of thoracic surgery, Massachusetts Memorial Hospital, Boston.

'28—A son was born July 23, to Edward A. Burkhardt and Mrs. Burkhardt.

'29—Milton L. Miller was married May 6 to Miss Bernice Saul. Mrs. Miller is a sister of Leon Saul, '28.





